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REMARKS

Drawing Objection - 37 CFR 1.83(a)

2. The Examiner's Objection to the Drawings under 37 CFR 1.83(a) has been studied and though the Applicant finds that each and every feature of claim 48 including the fuselage and aircraft have been shown in FIG. 1. The Applicant calls the Examiner's attention to paragraph 16 first sentence which clearly points out "a supersonic **aircraft 10** having a propulsion system 25 that includes a fixed geometry inlet duct 4 leading to an aircraft FLADE engine 1 which is mounted within the aircraft's main body or **fuselage 113**" Though the entire aircraft 10 and the fuselage 113 are not shown portions of both these elements are shown and would easily by recognized as such by anyone skilled in the art reading the specification in light of FIG. The Applicant respectfully submits that the drawings do show every feature of the invention specified in the claims. However in light of the Examiner's objection to the drawings a new FIG. 7 is submitted herewith for the Examiner's approval and if the Examiner still believes a new drawing is needed and approves the new FIG. 7, the applicant will submit new formal drawings and appropriately amend the Specification in accordance with the new FIG. 7.

Claim Rejections - 35 USC §103(a)

2. The Examiner's rejection of Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (5,404,713) in view of any of Tindell (5,447,283), Creasey et al. (2,956,759), Bullock (3,302,657), and Kerry et al. (2,940,692) and optionally in view of any of

EP 0,567,277,A1, Krebs et al. (3,673,802) and Gruner (4,159,624) has been studied and the Applicant respectfully disagrees with the Examiner. The Examiner's rejection of Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0,567,277,A1 in view of any of Tindell (5,447,283), Creasey et al. (2,956,759), Bullock (3,302,657), and Kerry et al. (2,940,692) and optionally in view of any of Johnson (5,404,713), Krebs et al. (3,673,802) and Gruner (4,159,624) has been studied and the Applicant respectfully disagrees with the Examiner.

The Examiner's reasoning for making the combinations in the 103 rejections is that it would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the gas turbine engine of Johnson or EP 0,567,277,A1, in order to provide a well known type of inlet for the gas turbine engine of Johnson or EP 0,567,277,A1. The Applicant respectfully submits that such a rejection has no basis in fact or law and is impermissible and the Examiner used hindsight in making the rejection.

The Examiner states that the secondary references teach the various fixed geometry inlet ducts recited in the rejected Claims but fails to give a technically valid reason or motivation to combine the references as required by the MPEP and the law. The Examiner has failed to address the fact that the secondary references relied upon to show fixed inlet ducts were attached to non-variable cycle engines and that the present Application and the two primary references, Johnson and EP 0,567,277,A1, expressly call out FLADE engines which are described in the specification and in the EP 0,567,277,A1 reference as being a variable cycle engine. The Applicant respectfully submits that contrary to the Examiner's

conclusion it would not have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a well known type of inlet for the gas turbine engine of Johnson et al with advantages including reduced flow losses and/or to allow control the inlet flow as well as enhanced handling of shock waves and/or to provide a smooth streamlined inlet and/or enhanced handling of supersonic flows into the inlet because nothing in the prior art shows that fixed ducts work efficiently or can handle airflow into variable cycle engines and in fact all of the secondary references show only non-variable cycle engines together with fixed ducts. Paragraph 0017 of the present Application states the following "A FLADE engine (FLADE being an acronym for "fan on blade") is one particular type of variable cycle engines characterized by an outer fan driven by a radially inner fan and discharging its flade air into an outer fan duct which is generally co-annular with and circumscribes an inner fan duct circumscribing the inner fan.". None of the engines disclosed in the secondary references cited by the Examiner show a variable cycle engine or any type, except EP 0,567,277,A1 which discloses a FLADE engine and does not disclose an inlet duct, together with "a fixed geometry inlet duct in direct flow communication with the engine inlet", with an element of all the Claims.

Furthermore, the EP 0,567,277,A1 reference does disclose a Flade engine but does not disclose or even mention "a fixed geometry inlet duct in direct flow communication with the engine inlet". The Applicant respectfully disagrees with the Examiner's contention that Bullock teaches a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet. Referring to Column 2, lines 37-45 of Bullock, Bullock clearly states that some of the air which enters the inlet end

of the duct may be allowed to escape through a variable aperture in the duct and thus it is clear to anyone skilled in the art that the duct in Bullock is variable and is not fixed. The variable aperture may be a vent 4 as illustrated and disclosed in the figure.

The FLADE engine in the Johnson reference is for avoiding spillage and excess sucking and the resulting decreased in ram recovery and spillage drag. This does not appear to be applicable to the long inlet ducts disclosed in the secondary references and nothing in the prior art even suggests such a combination. The Johnson reference states that the FLADE engine has important the air-flow matching characteristics illustrated by a free stream flow area A0 and the FLADE engine inlet area AI through which the total engine airflow passes and that for a given set of operating flight conditions, the airflow requirements are fixed by the pumping characteristics of the FLADE engine 1. If AI is too small to handle the air, the engine must "suck in" the lacking amount of air resulting in a decreased ram recovery and if AI is too large, the FLADE engine inlet 13 will supply more air than the engine can use resulting in excess drag (spillage drag) because we must either by-pass the excess air around the engine or "spill" it back out of the inlet. The Applicant respectfully submits that in light of this teaching in the Johnson reference, it would not have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a well known type of inlet for the gas turbine engine of Johnson as contended by the Examiner and, in fact, may teach against a employing a fixed duct with a FLADE engine.

Clearly, the Examiner used impermissible hindsight to make the combination for the 103 rejections. It would appear that

the Examiner has no basis in fact or anything even suggested in the prior art to arrive at the conclusion that - It would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a well known type of inlet for the gas turbine engine of Johnson. If anything, it would appear to one of ordinary skill in the art to employ a variable geometry inlet duct with the FLADE engine in the Johnson reference. It is clear that the secondary references and the prior art teach to one skilled in the art not to use a variable cycle engine with a fixed duct. It is undeniable that FLADE engine as taught by Johnson and EP 0,567,277,A1, are variable cycle engines. Thus one must conclude that one of ordinary skill in the art would not employ a fixed geometry inlet duct with the FLADE engine in the Johnson and EP 0,567,277,A1 references.

It is clear, as evidenced by the Examiner's statements that fail to cite any reason in any of the references to combine the cited references, that this rejection is based on impermissible hindsight. The court clearly teaches us that a conclusion of obviousness is an error when it is not accompanied by a clearly elucidated factual teachings, suggestions, or incentives from this prior art that shows the propriety of combination. Here, the Examiner has taken two references and combined them without any valid technical reason disclosed or even suggested in the prior art and in fact in direct contradiction of what is known and taught by the prior art. The Examiner has ignored the Applicant's argument that variable cycle engines are different from the engines disclosed in the secondary prior art references and that in fact the Examiner could not find one instance of a variable cycle engine employing a fixed duct and that in fact

the prior art teaches against using fixed ducts with variable cycle engines. The Examiner has failed to address the Applicant's argument that one skilled in the art would not combine a variable cycle engine with a fixed duct.

The CAFC in re Rouffet (CAFC) 47 USPQ2d 1453 (7/15/1998) stated "To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness." In other words, the Examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

In other words, "the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. The Board's naked invocation of skill in the art to supply a suggestion to combine the references cited in this case is therefore clearly erroneous. Absent any proper motivation to combine part of Levine's teachings with Freeburg's satellite system, the rejection of Rouffet's claim over these references was improper and is reversed."

Thus, the Applicant respectfully submits that the Examiner has failed to show any proper motivation to combine fixed ducts of the secondary references cited by the Examiner with variable cycle engines of the Johnson or EP 0,567,277,A1 references which discloses variable cycle FLADE engines. The Applicant respectfully submits that the remarks above overcome the Examiner's rejections of Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 under 35 U.S.C. 103(a) and that these Claims are in

condition for allowance.

3. As regards Claims 3, 7, 10, 14, 125, 29, 32, 36, 43, 47, 50, 54, 57, 63, and 67 and their respective dependent Claims, the Applicant respectfully submits that the Johnson (5,404,713) patent does not disclose a fan section which includes axially spaced apart first 32 and second 34 counter-rotatable fans as contended by the Examiner. Johnson (5,404,713) discloses a first fan with circumferentially spaced-apart fan rotor blades 32 and a high pressure shaft 26 also rotating a more axially aft second fan illustrated as a axially aft row of circumferentially spaced apart second fan rotor blades 36 having generally radially outwardly extending blade tips 38. The axially aft row of circumferentially spaced apart second fan rotor blades is the same as the core driven fan in the present application because it is driven by the high pressure turbine blades 24. The Applicant has previously amended Claims 3, 7, 10, 14, 25, 29, 32, 36, 43, 47, 50, 54, 57, 63, and 67 to more particularly point this distinction out between the first and second fan sections and that the first and second counter-rotatable fans are in the same fan section.

Thus, the Applicant respectfully submits that the remarks above overcome the Examiner's rejections of Claims 3, 7, 10, 14, 25, 29, 32, 36, 43, 47, 50, 54, 57, 63, and 67 and their respective dependent Claims, under 35 U.S.C. 103(a) and that these Claims are in condition for allowance.

4. As regards Claim 48 and it respective dependent Claims 50-52, 54, 55, 57-59, 61, 63-65, 67, 68, the Applicant respectfully submits that the Examiner has failed to show any prior art disclosing alone or in combination an aircraft

comprising:

a gas turbine engine within a fuselage of the aircraft,

the gas turbine engine comprising;

a fan section,

at least one row of FLADE fan blades disposed radially outwardly of and drivingly connected to the fan section,

the row of FLADE fan blades radially extending across a FLADE duct circumscribing the fan section, and

an engine inlet including a fan inlet to the fan section and an annular FLADE inlet to the FLADE duct; and

a fixed geometry inlet duct extending between an air intake mounted flush with respect to the fuselage and the engine inlet.

The Examiner has not given any reason for rejecting Claim 48 and its respective dependent Claims 50-52, 54, 55, 57-59, 61, 63-65, 67, and 68. Thus, the Applicant respectfully submits that the remarks above overcome the Examiner's rejections of Claims 3, 7, 10, 14, 25, 29, 32, 36, 43, 47, 50, 54, 57, 63, and 67 and their respective dependent Claims, under 35 U.S.C. 103(a) and that these Claims are in condition for allowance.

5. As regards Claims 41-48 and 61-67, the Applicant respectfully submits that the Examiner has failed to show any valid technical reason in the prior art to combine Johnson with any of the following:

Tindell, which teaches a fixed geometry inlet duct 2 in direct flow communication with the engine 8 inlet;

Creasey et al., which teaches a fixed geometry inlet duct 130 in direct flow communication with the engine inlet 155 and the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and

divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet where the engine is a turbojet engine (col. 1, lines 26+),

Bullock, which teaches a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet and the fixed geometry inlet duct having a two-dimensional (rectangular, col. 2, lines 30+) convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet 12 where the engine is a gas turbine engine (col. 3, lines 7+); and

Kerry et al., which teaches a fixed geometry inlet duct 37 in direct flow communication with the engine inlet.

The Examiner's conclusion that it would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with any of the configurations above in order to provide a well known type of inlet for the gas turbine engine of Johnson prior art reference disclosing alone or in combination the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet is totally unsubstantiated as explained above. The present Application provides clear evidence, in paragraph 5, to show that variable inlet ducts are taught in the prior art and therefore it would have been obvious to one of ordinary skill in the art to employ a variable not a fixed geometry inlet duct with the gas turbine engine of Johnson or EP 0,567,277,A1.

The Examiner has not given any valid technical reason for rejecting Claim 48 and its respective dependent Claims 50-52, 54, 55, 57-59, 61, 63-65, 67, and 68. Thus, the Applicant respectfully submits that the remarks above overcome the Examiner's rejections of Claims 3, 7, 10, 14, 25, 29, 32, 36, 43, 47, 50, 54, 57, 63, and 67 and their respective dependent Claims, under 35 U.S.C. 103(a) and that these Claims are in condition for allowance.

6. The Applicant respectfully submits that the remarks above overcome the Examiner's rejection of Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 under 35 U.S.C. 103(a) as being unpatentable over Johnson (5,404,713) in view of any of Tindell (5,447,283), Creasey et al. (2,956,759), Bullock (3,302,657), and Kerry et al. (2,940,692) and optionally in view of any of EP 0,567,277,A1, Krebs et al. (3,673,802) and Gruner (4,159,624). The Applicant respectfully submits that the remarks above overcome the Examiner's rejection of Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 under 35 U.S.C. 103(a) as being unpatentable over EP 0,567,277,A1 in view of any of Tindell (5,447,283), Creasey et al. (2,956,759), Bullock (3,302,657), and Kerry et al. (2,940,692) and optionally in view of any of Johnson (5,404,713), Krebs et al. (3,673,802) and Gruner (4,159,624).

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The Applicant respectfully submits that Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 are allowable over all of the cited art and are in condition for allowance and request that they be passed on to issue.

Respectfully submitted,

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